

Work Order ID 138719

138719

Page 1

November 10, 2015 2:31:33 PM

Item ID: D350-636-012

Accept

N900040100

Setup Start

NS1

Revision ID:

Stop

NS2

Item Name: Skidtube RH, Std Wearplates, DART (Apical) Cylindrical/Aerazur Float Comp.

Start Date: 11/10/2015 Start Qty: 1.00

1

Cust Item ID:

Required Date: 11/30/2015 Req'd Qty: 1.00

1

Customer:

Reference:

Approvals: Process Plan: SA Date: 20151110

Tooling:

Date:

Run Start

NR1

QC:

Date:

SPC (Y/N):

Date:

Stop

NR2

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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Draw Nbr

Revision Nbr

D2750-042

G

D3492

C

**DAG
6
9-59**

100

Document Control

0.00

100

DC

DOCUMENT CONTROL

Memo

0.00

Doc.Control -USB or Paperwork

record fwd angle:

Photocopy blue file and type labels per PPP D350-636-012 CHG 007

mha DEC 14 2015

15-11-12

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval		
Description Work Order Deviation				Disposition					
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐							
		OTHER :							

Work Order ID 138719

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138719

Page 2

Item ID: D350-636-012

Accept

N900040100Setup Start ***NS1***

Revision ID:

Item Name: Skidtube RH, Std Wearplates, DART (Apical) Cylindrical/Aerazur Float Comp.

Stop ***NS2***

Start Date: 11/10/2015 Start Qty: 1.00

1

Cust Item ID:

Required Date: 11/30/2015 Req'd Qty: 1.00

1

Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start ***NR1***

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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110

0.00

110

Skidtubes

Skidtubes

Memo

0.02

Skidtubes

1- Pick D2600-3 Bent

2- Deburr FWD and AFT ends, remove bending marks. Scribe batch# inside AFT end per dwg D2750

3- Drill pilot holes for blade fitting bolt holes using DT8983. Start with 3/16", then open to 0.500" using center drill then ream holes using 0.500" reamer. PIN first side. Repeat process on second side.

ENSURE PROPER POSITIONING FWD BEND MUST BE FACING UP WHEN DRILLING FIRST SIDE

Drill pilot holes as per Dwg D2750 sheet 4 (D2750-2 details). Drill using drill Jig DT8150 & DT8863A for second side only DT8863B for first side (detail K)

4- Locate DT8329 off of blade fitting bolt holes and drill pilot holes for blade fitting. Open to 0.500" using hole saw. VERIFY AND RECORD FWD BEND ANGLE.

6- Drill pilot holes for wearplates as per Dwg D2750 using DT8108 open to 0.297".

7- Open up holes of Detail J to 0.297" (total of 2 holes per side)

8- Weld D2744 Cap as per Dwg D2750 and QSI 004. Fill grooves in bend left from bending as per QSI 004

15-11-13**15-11-12**

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

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Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval		
Description Work Order Deviation				Disposition					

Root Cause				FAULT CATEGORY			
Environment ☐	☐	No Re-verification ☐	☐	Pressure/Forced ☐	☐	Temperature/Cure ☐	☐
Design ☐	☐	Operator ☐	☐	Bending ☐	☐	Set-up ☐	☐
Doc/Data ☐	☐	Offset/Setup ☐	☐	Centre Not Concentric ☐	☐	BOM/Route ☐	☐
Equip/Tooling ☐	☐	Supplier ☐	☐	Cracks ☐	☐	Broken/Damage/Defect ☐	☐
Handling/Pre ☐	☐	Training ☐	☐	Crimp/Kink/Ripple/Wave ☐	☐	Inspection Incomplete/Unqualified ☐	☐
Material ☐	☐	Use for Testing ☐	☐	Cuffs ☐	☐	Contamination ☐	☐
Internal Transport ☐	☐	Poor Information ☐	☐	Crushing ☐	☐	Countersink ☐	☐
Tribal Knowledge ☐	☐	Rushing ☐	☐	Heat Treat ☐	☐	Cut Too Short ☐	☐
LOA ☐	☐	Product Improvement ☐	☐	Wave/Twist in Tube ☐	☐	Instructions Incomplete/Unclear ☐	☐
Substation ☐	☐	Process Improvement ☐	☐	Marks/Chatter ☐	☐	Drill Holes ☐	☐
Past Expiry Date ☐	☐	Manufacturing Process ☐	☐	OTHER : _____			
Misidentified ☐	☐	Past Due ☐	☐				

Work Order ID 138719

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November 10, 2015 2:31:33 PM

Item ID: D350-636-012 Accept ***N900040100*** Setup Start ***NS1***
 Revision ID: Stop ***NS2***
 Item Name: Skidtube RH, Std Wearplates, DART (Apical) Cylindrical/Aerazur Float Comp.
 Start Date: 11/10/2015 Start Qty: 1.00 ***1*** Cust Item ID:
 Required Date: 11/30/2015 Req'd Qty: 1.00 ***1*** Customer:
 Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start ***NR1***
 QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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A/R Aluminum Rod batch: **MB22917**

9- Grind welds flush as per Dwg D2750

78E15-11-13

120	QC10- Inspect visual per QSI004- ground welds	0.00							
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120

QC

Quality Control

Memo

0.00

DAS
38
9-89

NOV 16 2015

130	QC5- Inspect part completeness to step on W/O	0.00							
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130

QC

Quality Control

Memo

0.00

DAS
38
9-89

NOV 16 2015

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval		
Description Work Order Deviation				Disposition					

Root Cause				FAULT CATEGORY			
Environment ☐	☐	No Re-verification ☐	☐	Pressure/Forced ☐	☐	Temperature/Cure ☐	☐
Design ☐	☐	Operator ☐	☐	Bending ☐	☐	Set-up ☐	☐
Doc/Data ☐	☐	Offset/Setup ☐	☐	Centre Not Concentric ☐	☐	BOM/Route ☐	☐
Equip/Tooling ☐	☐	Supplier ☐	☐	Cracks ☐	☐	Broken/Damage/Defect ☐	☐
Handling/Pre ☐	☐	Training ☐	☐	Crimp/Kink/Ripple/Wave ☐	☐	Inspection Incomplete/Unqualified ☐	☐
Material ☐	☐	Use for Testing ☐	☐	Cuffs ☐	☐	Contamination ☐	☐
Internal Transport ☐	☐	Poor Information ☐	☐	Crushing ☐	☐	Countersink ☐	☐
Tribal Knowledge ☐	☐	Rushing ☐	☐	Heat Treat ☐	☐	Cut Too Short ☐	☐
LOA ☐	☐	Product Improvement ☐	☐	Wave/Twist in Tube ☐	☐	Instructions Incomplete/Unclear ☐	☐
Substation ☐	☐	Process Improvement ☐	☐	Marks/Chatter ☐	☐	Drill Holes ☐	☐
Past Expiry Date ☐	☐	Manufacturing Process ☐	☐	OTHER :			
Misidentified ☐	☐	Past Due ☐	☐				

Work Order ID 138719***138719***

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November 10, 2015 2:31:33 PM

Item ID: D350-636-012

Accept

N900040100Setup Start ***NS1***

Revision ID:

Item Name: Skidtube RH, Std Wearplates, DART (Apical) Cylindrical/Aerazur Float Comp.

Stop ***NS2***

Start Date: 11/10/2015 Start Qty: 1.00

1

Cust Item ID:

Required Date: 11/30/2015 Req'd Qty: 1.00

1

Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start ***NR1***

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
140	Chemical Conversion Coat per QSI005 4.1	0.00							
140									
HandFinish	Memo	0.01							
Hand Finishing									
150	QC7-Inspect Chemical Conversion Coat	0.00							
150									
QC	Memo	0.00							
Quality Control									

15-11-17
JHDAS
03
9-89
15-11-17

DQA: _____ Date: _____

**WORK ORDER NON-CONFORMANCE / UPDATE**

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval		
Description Work Order Deviation				Disposition					
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Mislabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐		OTHER : ☐					

Work Order ID 138719

November 10, 2015 2:31:33 PM

138719

Page 5

Item ID: D350-636-012

Accept

N900040100

Setup Start

NS1

Revision ID:

Stop

NS2

Item Name: Skidtube RH, Std Wearplates, DART (Apical) Cylindrical/Aerazur Float Comp.

Start Date: 11/10/2015 Start Qty: 1.00

1

Cust Item ID:

Required Date: 11/30/2015 Req'd Qty: 1.00

1

Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run Start

NR1

QC:

Date:

SPC (Y/N):

Date:

Stop

NR2Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

160

0.00

160

Skidtubes

0.02

Skidtubes

Memo

1- Open up holes of Detail L using hole saw and ground handling to 0.625" (total of 8 holes per side) as per dwg D2750.

2- Open up holes of Detail K using hole saw to 0.750" (total of 4 holes per side) as per dwg D2750.

3- Open float holes using uni-bit to .500" (4 per Side)

4- Chamfer holes of Detail K, L, ground handling and float holes per dwg D2750 (welding instructions on sheet 9)

5- Deburr and blow out all chips from inside of tube

6- Prepare tube for welding, remove alodine as required.

7- Bond web D2739 in place as per OSI 015, let cure for 12hrs.

A/R Sikaflex-291

batch: 153427

exp. date:

****ATTN: USE I-BEAM LOCATION AID (BLADE FITTING)****

8- Weld spacers D3490-1, D3490-3 and D2743 as per dwg D2750 & OSI004 (welding instructions on sheet 9)

A/R Aluminum Rod

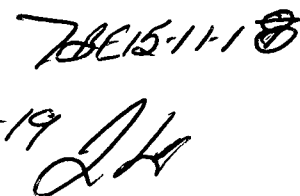
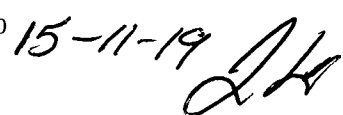
batch: M32917

9- At section AP-AP drill out x-bolt spacer to 0.404"

10-Grind welds flush as per Dwg D2750

15-11-17 

16-2-12

7BE15-11-18 15-11-19 

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval		
Description Work Order Deviation				Disposition					

Root Cause				FAULT CATEGORY			
Environment ☐	Design ☐	Doc/Data ☐	Equip/Tooling ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐
Handling/Pre ☐	Material ☐	Internal Transport ☐	Tribal Knowledge ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐
LOA ☐	Substation ☐	Past Expiry Date ☐	Misidentified ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐
				Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐
				Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐
				Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐
				Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐
				Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐
				Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐
				Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐
No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐				OTHER : ☐			

Work Order ID 138719

November 10, 2015 2:31:33 PM

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Item ID: D350-636-012

Accept

N900040100Setup Start ***NS1***

Revision ID:

Stop ***NS2***

Item Name: Skidtube RH, Std Wearplates, DART (Apical) Cylindrical/Aerazur Float Comp.

Start Date: 11/10/2015 Start Qty: 1.00

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Cust Item ID:

Required Date: 11/30/2015 Req'd Qty: 1.00

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Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start ***NR1***

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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11- Spot face ground handling holes section (total of 4 places per side) as per
dwg D275015-11-19 *DL*12- Deburr holes, ensure tube is free of all scratches before sending to
paint.

BE 15-11-19

170

QC10- Inspect visual per QSI004- ground welds 0.00

170

QC

Memo

0.00

Quality Control

DAS
38
9-89

NOV 23 2015

180

QC5- Inspect part completeness to step on W/O 0.00

180

QC

Memo

0.00

Quality Control

VERIFY C'BOARD IS GOOD

DAS
38
9-89

NOV 23 2015

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

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Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
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Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐							
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Work Order ID 138719

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Item ID: D350-636-012

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N900040100Setup Start ***NS1***

Revision ID:

Stop ***NS2***

Item Name: Skidtube RH, Std Wearplates, DART (Apical) Cylindrical/Aerazur Float Comp.

Start Date: 11/10/2015 Start Qty: 1.00

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Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

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Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

190

Pressure Wash per QSI005 4.3

0.00

190

HandFinish

Memo

0.01

Hand Finishing

✓ Re-alodine tube as per QSI 005 section 4.1.2.1 do not acid etch.

IRH d JH 13/11/12

200

0.00

200

SprayPaint

Memo

0.01

Spray Painting

1- PRIME AS PER DWG AND QSI 005 4.2

PRIMER PRC DESOTO 515X349 BATCH: 130992

2- PAINT WHITE AS PER DWG AND QSI 005 4.2

PAINT BATCH: 133325DAS
41
9-89
15-11-26

210

QC14- Inspect Spray Paint

0.00

210

QC

Memo

0.00

Quality Control

Inspect for foreign object per QSI 024

IRH d JH 15/12/08
DAS
15
9-89

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

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Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval		
Description Work Order Deviation				Disposition					

Root Cause				FAULT CATEGORY			
Environment ☐		No Re-verification ☐		Pressure/Forced ☐		Temperature/Cure ☐	
Design ☐		Operator ☐		Bending ☐		Set-up ☐	
Doc/Data ☐		Offset/Setup ☐		Centre Not Concentric ☐		BOM/Route ☐	
Equip/Tooling ☐		Supplier ☐		Cracks ☐		Broken/Damage/Defect ☐	
Handling/Pre ☐		Training ☐		Crimp/Kink/Ripple/Wave ☐		Inspection Incomplete/Unqualified ☐	
Material ☐		Use for Testing ☐		Cuffs ☐		Contamination ☐	
Internal Transport ☐		Poor Information ☐		Crushing ☐		Countersink ☐	
Tribal Knowledge ☐		Rushing ☐		Heat Treat ☐		Cut Too Short ☐	
LOA ☐		Product Improvement ☐		Wave/Twist in Tube ☐		Instructions Incomplete/Unclear ☐	
Substation ☐		Process Improvement ☐		Marks/Chatter ☐		Drill Holes ☐	
Past Expiry Date ☐		Manufacturing Process ☐		OTHER : _____			
Misidentified ☐		Past Due ☐					

Work Order ID 138719

138719

Page 8

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Item ID: D350-636-012 Accept *N900040100* Setup Start *NS1*
 Revision ID: Stop *NS2*
 Item Name: Skidtube RH, Std Wearplates, DART (Apical) Cylindrical/Aerazur Float Comp.
 Start Date: 11/10/2015 Start Qty: 1.00 *1* Cust Item ID:
 Required Date: 11/30/2015 Req'd Qty: 1.00 *1* Customer:
 Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start *NR1*
 QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop *NR2*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
230	HandFinishing	0.00							
230									
HandFinish	Memo	0.02							
Hand Finishing	1-Install inserts as per dwg D2750								
	2-Inspect for Foreign Objects								
	3-Install blade fitting D3488-042, wearshoes and ground handling hardware as per dwg D2750								
	SIKA FLEX 241								
	BATCH: 11133427								
	EXP DATE: 16102								
	4-assemble o'ring to plug as per dwg D3492 and apply o'ring lube								
	A/R 55-o'ring lube batch: 1113345 RTU 548 11133436 16102								
	5-Coat all exposed fasteners with "LPS Procyon"								
	batch: 11122400								
240	QC5- Inspect part completeness to step on W/O	0.00							
240									
QC	Memo	0.00							
Quality Control									

DAS
38
9-89

1

DEC 10 201

DAS
38
9-89

DEC 10 2015

DQA: _____ Date: _____

**WORK ORDER NON-CONFORMANCE / UPDATE**

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval		
Description Work Order Deviation				Disposition					
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Mislabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐		OTHER : ☐					

Work Order ID 138719***138719***

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Item ID: D350-636-012

Accept

N900040100Setup Start ***NS1***

Revision ID:

Stop ***NS2***

Item Name: Skidtube RH, Std Wearplates, DART (Apical) Cylindrical/Aerazur Float Comp.

Start Date: 11/10/2015 Start Qty: 1.00 ***1***

Cust Item ID:

Required Date: 11/30/2015 Req'd Qty: 1.00 ***1***

Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start ***NR1***

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

250

Pick Kit

0.00

250

Packaging

Memo

0.00

Packaging

DAS
27

DEC 14 2015

260

QC4- 100% Inspect kits for completeness

0.00

260

QC

Memo

0.00

Quality Control

1X
DAS
28
9-89

DEC 14 2015

270

Packaging

0.00

270

Packaging

Memo

0.00

Packaging

Package as per PPR D350-636-012
Location : FG072DAS
28
9-891X
DAS
27
9-89

DEC 14 2015

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval		
Description Work Order Deviation				Disposition					
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Mislabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐		OTHER : _____					

Work Order ID 138719***138719***

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Item ID: D350-636-012

Accept

N900040100Setup Start ***NS1***

Revision ID:

Stop ***NS2***

Item Name: Skidtube RH, Std Wearplates, DART (Apical) Cylindrical/Aerazur Float Comp.

Start Date: 11/10/2015 Start Qty: 1.00 ***1***

Cust Item ID:

Required Date: 11/30/2015 Req'd Qty: 1.00 ***1***

Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start ***NR1***

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

280	QC21- Final Inspection - Work Order Release	0.00							
-----	---	------	--	--	--	--	--	--	--

280

QC Memo 0.00

Quality Control

MCJ DEC 15 2015MCJ DEC 15 2015

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval		
Description Work Order Deviation				Disposition					

Root Cause				FAULT CATEGORY							
Environment ☐	☐	No Re-verification ☐		☐	Pressure/Forced	☐	Temperature/Cure	☐	Power Loss/Surge	☐	Positioned Wrong
Design ☐	☐	Operator ☐		☐	Bending	☐	Set-up	☐	Folio/Program	☐	Outside Dimensions
Doc/Data ☐	☐	Offset/Setup ☐		☐	Centre Not Concentric	☐	BOM/Route	☐	Grain	☐	Over/Under tolerance
Equip/Tooling ☐	☐	Supplier ☐		☐	Cracks	☐	Broken/Damage/Defect	☐	Weld	☐	Part Incorrect
Handling/Pre ☐	☐	Training ☐		☐	Crimp/Kink/Ripple/Wave	☐	Inspection Incomplete/Unqualified	☐	Wrong Stock Pulled	☐	Part Lost/Missing
Material ☐	☐	Use for Testing ☐		☐	Cuffs	☐	Contamination	☐	Out of Sequence	☐	Part Moved
Internal Transport ☐	☐	Poor Information ☐		☐	Crushing	☐	Countersink	☐	Off-set	☐	Drawing
Tribal Knowledge ☐	☐	Rushing ☐		☐	Heat Treat	☐	Cut Too Short	☐	Mislabeled	☐	Finish
LOA ☐	☐	Product Improvement ☐		☐	Wave/Twist in Tube	☐	Instructions Incomplete/Unclear	☐	Fit/Function	☐	Misread
Substation ☐	☐	Process Improvement ☐		☐	Marks/Chatter	☐	Drill Holes	☐	Misaligned/off center	☐	Turning Sequence
Past Expiry Date ☐	☐	Manufacturing Process ☐		OTHER : _____							
Misidentified ☐	☐	Past Due ☐									

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138719

D350-636-012

Required Qty: 1.00

138160

Picklist Print

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Page 2

Work Order ID: 138719

138719

Parent Item: D350-636-012

D350-636-012

Parent Item Name: Skidtube RH, Std Wearplates, DART (Apical) Cylindrical/Aerazur Float Comp.

Start Date: 11/10/2015

Required Date: 11/30/2015

Start Qty: 1.00

Required Qty: 1.00

D2743

Manufactured No

160

Each

68.0000

8

8

D2743

Crossbolt Spacer

BB15-11-18

Location

Loc Qty

Loc Code

LG001

68

130731

2

137271

66

8

D3490-3

Manufactured No

160

Each

14.0000

4

4

D3490-3

Cross Bolt Spacer

BB15-11-18

Location

Loc Qty

Loc Code

LG001

14

137807

14

4

D3490-1

Manufactured No

160

Each

66.0000

4

4

D3490-1

Cross Bolt Spacer

BB15-11-18

Location

Loc Qty

Loc Code

LG

23

133205

23

LG001

43

134019

43

4

D3631-1

Manufactured No

230

Each

146.0000

8

8

D3631-1

Washer

lll 15/12/15

Location

Loc Qty

Loc Code

FP001

146

128320

6

135951

100

136593

40

x8

Picklist Print

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Page 3

Work Order ID: 138719

138719

Parent Item: D350-636-012

D350-636-012

Parent Item Name: Skidtube RH, Std Wearplates, DART (Apical) Cylindrical/Aerazur Float Comp.

Start Date: 11/10/2015

Required Date: 11/30/2015

Start Qty: 1.00

Required Qty: 1.00

D3791-1 Manufactured No 230 Each 11.0000 1 1

D3791-1

Wearplate

Handwritten: 12/12/10

Location

Loc Qty

Loc Code

FP002

11

128234

11

D3793-3 Manufactured No 230 Each 10.0000 1 1

D3793-3

Wearplate Aft

Handwritten: B139733 (12) all (12/10)

Location

Loc Qty

Loc Code

FP002

10

130534

10

MS21043-6 Purchased No 230 Each 79.0000 4 4

MS21043-6

NUT

Handwritten: 12/12/09

Location

Loc Qty

Loc Code

FG

20

103693

20

FP001

10

131618

2

m130325

2

m133077

1

m133234

5

ST302

49

m133483

49

D3794-1 Manufactured No 230 Each 13.0000 1 1

D3794-1

Gasket Fwd

Handwritten: 15/12/10

Location

Loc Qty

Loc Code

FP001

13

130509

13

Handwritten: B139039

Handwritten: 45

Picklist Print

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Page 4

Work Order ID: 138719

138719

Parent Item: D350-636-012

D350-636-012

Parent Item Name: Skidtube RH, Std Wearplates, DART (Apical) Cylindrical/Aerazur Float Comp.

Start Date: 11/10/2015

Required Date: 11/30/2015

Start Qty: 1.00

Required Qty: 1.00

NAS1611-010

Purchased

No

230

Each

387.0000

8

8

NAS1611-010

O-RING

**

all 151210

Location

Loc Qty

Loc Code

FP001

387

m130770

271

m131618

116

x 6

D2741

Manufactured

No

250

Each

60.0000

1

1

D2741

Replacement Blade

**

DAS
27
8-09

DAS
27
8-09

DEC 14 2015

Location

Loc Qty

Loc Code

FG

10

131616

10

ST538

50

132981

16

135909

34

J

NAS1515H3L

Purchased

No

230

Each

255.0000

4

4

***NAS1515H3L ***

Washer

**

all 151211

Location

Loc Qty

Loc Code

FG

40

102472

40

FP001

55

m127831

55

ST266

160

m127831

40

m130726

120

x 4

Picklist Print

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Page 5

Work Order ID: 138719

138719

Parent Item: D350-636-012

D350-636-012

Parent Item Name: Skidtube RH, Std Wearplates, DART (Apical) Cylindrical/Aerazur Float Comp.

Start Date: 11/10/2015

Required Date: 11/30/2015

Start Qty: 1.00

Required Qty: 1.00

NAS1611-013

Purchased

No

230

Each

206.0000

8

8

NAS1611-013

O-Ring

**

15/12/16

Location

Loc Qty

Loc Code

FP001

206

m130758

206

XG

AN3C6A

Purchased

No

230

Each

139.0000

4

4

AN3C6A

Bolt

**

15/12/16

Location

Loc Qty

Loc Code

CA

39

m128704

39

M133694

X4

FG

10

122416

10

ST249

50

m133363

50

ST338a

36

m128769

30

m133077

6

ST349

4

m132767

4

NAS1149C0832R

Purchased

No

230

Each

95.0000

1

1

NAS1149C0832R

Washer

**

15/12/16

Location

Loc Qty

Loc Code

ST271

95

m125807

95

VL

Picklist Print

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Work Order ID: 138719

138719

Parent Item: D350-636-012

D350-636-012

Parent Item Name: Skidtube RH, Std Wearplates, DART (Apical) Cylindrical/Aerazur Float Comp.

Start Date: 11/10/2015

Required Date: 11/30/2015

Start Qty: 1.00

Required Qty: 1.00

D3536-25	Manufactured	No	230	Each	16.0000	1	1	
D3536-25								
Gasket Center								

all 15/12/10

Location	Loc Qty	Loc Code
FG	6	B 139433
87053	2	
95328	4	
FP001	10	
125909	1	
132316	8	
89057	1	

D3794-3	Manufactured	No	230	Each	26.0000	1	1	
D3794-3								
Gasket Aft								

all 15/12/10

Location	Loc Qty	Loc Code
FP001	26	
125917	1	
127383	24	
92658	1	

AN3C5A	Purchased	No	230	Each	402.0000	34	34	
AN3C5A								
Bolt								

all 15/12/10

Location	Loc Qty	Loc Code
FG	5	M1133769
122800	5	
ST338a	147	
M131803	8	
M132640	64	
M133483	75	
ST350	250	
M133234	250	

Picklist Print

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Work Order ID: 138719

138719

Parent Item: D350-636-012

D350-636-012

Parent Item Name: Skidtube RH, Std Wearplates, DART (Apical) Cylindrical/Aerazur Float Comp.

Start Date: 11/10/2015

Required Date: 11/30/2015

Start Qty: 1.00

Required Qty: 1.00

D3537-1

Manufactured No

230

Each

44.0000

3

3

D3537-1

Wearpad

all 11/12/15

Location

Loc Qty

Loc Code

FG

18

79833

8

88562

10

FP001

21

128225

1

136314

20

ST611

5

105680

1

125911

4

B136712

x3

D3535-25

Manufactured No

230

Each

16.0000

1

1

D3535-25

Wearplate Center

all 11/12/15

Location

Loc Qty

Loc Code

FG

4

128224

2

95077

2

FP002

12

~~136531~~

6

137189

6

x1

48

D3492-3

Manufactured No

230

Each

85.0000

8

8

D3492-3

Plug

all 11/12/07

Location

Loc Qty

Loc Code

FP001

85

133470

35

137728

50

B138006

48

Picklist Print

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Page 8

Work Order ID: 138719

138719

Parent Item: D350-636-012

D350-636-012

Parent Item Name: Skidtube RH, Std Wearplates, DART (Apical) Cylindrical/Aerazur Float Comp.

Start Date: 11/10/2015

Required Date: 11/30/2015

Start Qty: 1.00

Required Qty: 1.00

NAS1149C0332R

Purchased

No

230

Each

4,114.000

38

38

NAS1149C0332R

WASHER

**

11/12/16

Location

Loc Qty

Loc Code

FP001

1004

m132930

1004

FP01

581

m133284

581

GA

435

m133284

435

ST271

2094

m133284

2094

✓ 38

D3488-042

Manufactured

No

230

Each

14.0000

1

1

D3488-042

Blade Fitting RH

**

11/12/16

Location

Loc Qty

Loc Code

FP

7

131621

7

FP001

7

129602

7

✓ 1

ALS4-1032-225

AELS8-1032-225

Purchased

No

230

Each

510.0000

38

38

ALS4-1032-225

Rivnut

**

11/12/16

Location

Loc Qty

Loc Code

FG

120

M127028

120

FP001

33

M131582

33

st549

357

M131582

357

11133472

✓ 38

Picklist Print

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Work Order ID: 138719

138719

Parent Item: D350-636-012

D350-636-012

Parent Item Name: Skidtube RH, Std Wearplates, DART (Apical) Cylindrical/Aerazur Float Comp.

Start Date: 11/10/2015

Required Date: 11/30/2015

Start Qty: 1.00

Required Qty: 1.00

D3492-1

Manufactured No

230

Each

55.0000

8

8

D3492-1

Plug

**

11/12/10

Location

Loc Qty

Loc Code

FP001

55

13139053

136687

55

1

D3793-1

Manufactured No

230

Each

10.0000

1

1

D3793-1

Wearplate Fwd

**

13139734 (4) 11/12/10

Location

Loc Qty

Loc Code

FP002

10

130508

10

AN8C35A

Purchased No

230

Each

95.0000

1

1

AN8C35A

Bolt

**

11/12/10

Location

Loc Qty

Loc Code

FG

5

121275

5

FP001

60

m131947

13

m132169

2

m132381

15

m132522

15

m132674

15

ST273A

30

1

m133332

15

m133336

15

Picklist Print

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Page 10

Work Order ID: 138719

138719

Parent Item: D350-636-012

D350-636-012

Parent Item Name: Skidtube RH, Std Wearplates, DART (Apical) Cylindrical/Aerazur Float Comp.

Start Date: 11/10/2015

Required Date: 11/30/2015

Start Qty: 1.00

Required Qty: 1.00

MS21083C8

Purchased

No

230

Each

68.0000

1

1

MS21083C8

Nut

Handwritten: 11/12/15

Location

Loc Qty

Loc Code

ST297

68

Handwritten: 11133694

Handwritten: x1

m132067

2

m133016

13

m133134

8

m133483

20

m133577

25

D2745

Manufactured

No

230

Each

91.0000

8

8

D2745

Bushing

Handwritten: 11/12/15

Location

Loc Qty

Loc Code

FP001

91

Handwritten: B139008

Handwritten: x8

129584

7

136214

34

137731

50

Picklist Print

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Page 11

Work Order ID: 138719

138719

Parent Item: D350-636-012

D350-636-012

Parent Item Name: Skidtube RH, Std Wearplates, DART (Apical) Cylindrical/Aerazur Float Comp.

Start Date: 11/10/2015

Required Date: 11/30/2015

Start Qty: 1.00

Required Qty: 1.00

AN6C44A

Purchased

No

230

Each

585.0000

4

4

AN6C44A

Bolt

HL 101.2108

Location

Loc Qty

Loc Code

FP001

107

131649

100

m131367

1

m132169

6

ST273A

413

m130863

13

m131151

50

m132381

52

m132522

52

m132556

246

ST332

11

m130863

11

ST333

54

m130863

4

m131946

50

D3532-1

Manufactured

No

250

Each

17.0000

2

2

D3532-1

Spacer

DAS
27
9-89

DAS

27

9-89

Location

Loc Qty

Loc Code

ST041

17

131132

5

136705

12

B3906S

DAS
DEC 12 2015
9-89

DAS
28
9-89

Picklist Print

November 10, 2015 2:31:44 PM

Page 12

Work Order ID: 138719

138719

Parent Item: D350-636-012

D350-636-012

Parent Item Name: Skidtube RH, Std Wearplates, DART (Apical) Cylindrical/Aerazur Float Comp.

Start Date: 11/10/2015

Required Date: 11/30/2015

Start Qty: 1.00

Required Qty: 1.00

MS21083C8

Purchased

No

250

Each

68.0000

2

2

MS21083C8

Nut

**

DAS
27
9-89

Location

Loc Qty

Loc Code

ST297

68

m132067

2

m133016

13

m133134

8

m133483

20

m133577

25

DAS
28
9-89

NAS1149D0863J

Purchased

No

250

Each

586.0000

2

2

NAS1149D0863J

Washer

**

DAS
27
9-89

Location

Loc Qty

Loc Code

FP001

47

125484

47

ST260a

415

125268

315

125635

100

ST269

124

125268

124

DAS
28
9-89

D3493-1

Manufactured

No

250

Each

47.0000

2

2

D3493-1

Washer

**

DAS
27
9-89
DEC 14 2015

Location

Loc Qty

Loc Code

FG

10

97201

10

ST039

37

128755

7

137724

30

DAS
28
9-89

***ONLY INSTALL IF INSTALLING ON APICAL
FLOAT SYSTEM***

November 10, 2015 2:31:44 PM

Shop Packet Print

Page 12

Picklist Print

November 10, 2015 2:31:44 PM

Page 13

Work Order ID: 138719

138719

Parent Item: D350-636-012

D350-636-012

Parent Item Name: Skidtube RH, Std Wearplates, DART (Apical) Cylindrical/Aerazur Float Comp.

Start Date: 11/10/2015

Required Date: 11/30/2015

Start Qty: 1.00

Required Qty: 1.00

AN8C21A

Purchased

No

250

Each

82.0000

2

2

AN8C21A

Bolt

**

13

208

27

9-89

1-13

DEC 14 2015

Location

Loc Qty

Loc Code

FG

4

123966

2

m132169

2

ST273A

58

m132674

30

m133332

28

ST332

20

m131100

1

m132169

2

m132381

2

m132522

4

m132542

11

DAS
28
9-89

QTY -041	QTY -042	QTY -043	QTY -044	PART NUMBER	DESCRIPTION
X				D2750-041	350 SKIDTUBE ASSEMBLY, LH
	X			D2750-042	350 SKIDTUBE ASSEMBLY, RH
		X		D2750-043	350 SKIDTUBE ASSEMBLY, LH
			X	D2750-044	350 SKIDTUBE ASSEMBLY, RH
1	1	1	1	D2739	WEB
8	8	8	8	D2743	SPACER
1	1	1	1	D2744	CAP
8	8	8	8	D2745	BUSHING
1				D2750-1	SKIDTUBE WELDMENT, LH
	1			D2750-2	SKIDTUBE WELDMENT, RH
		1		D2750-3	SKIDTUBE WELDMENT, LH
			1	D2750-4	SKIDTUBE WELDMENT, RH
1		1		D3488-041	BLADE FITTING, LH
	1		1	D3488-042	BLADE FITTING, RH
4	4	4	4	D3490-1	SPACER
4	4			D3490-3	SPACER
		4	4	D3490-5	SPACER
8	8	8	8	D3492-041	PLUG ASSEMBLY
8	8			D3492-043	PLUG ASSEMBLY
		8	8	D3492-045	PLUG ASSEMBLY
1	1	1	1	D3535-25	WEARSHOE
1	1	1	1	D3536-25	GASKET
3	3	3	3	D3537-1	WEARPAD
8	8	8	8	D3631-1	WASHER
1	1	1	1	D3791-1	WEARPLATE
1	1	1	1	D3793-1	WEARSHOE
1	1	1	1	D3793-3	WEARSHOE
1	1	1	1	D3794-1	GASKET
1	1	1	1	D3794-3	GASKET
38	38	38	38	ALS4-1032-225	INSERT (OR ALS7-1032-225, AKS4-1032-225, AELS-1032-225)
34	34	34	34	AN3C5A	BOLT
4	4	4	4	AN3C6A	BOLT
4	4	4	4	AN8C44A	BOLT
1	1	1	1	AN8C35A	BOLT
38	38	38	38	AN960C10L	WASHER
1	1	1	1	AN960C816L	WASHER
4	4	4	4	MS21043-6	NUT
1	1	1	1	MS21083C8	NUT
4	4	4	4	NAS1515H3L	WASHER

GENERAL NOTES:

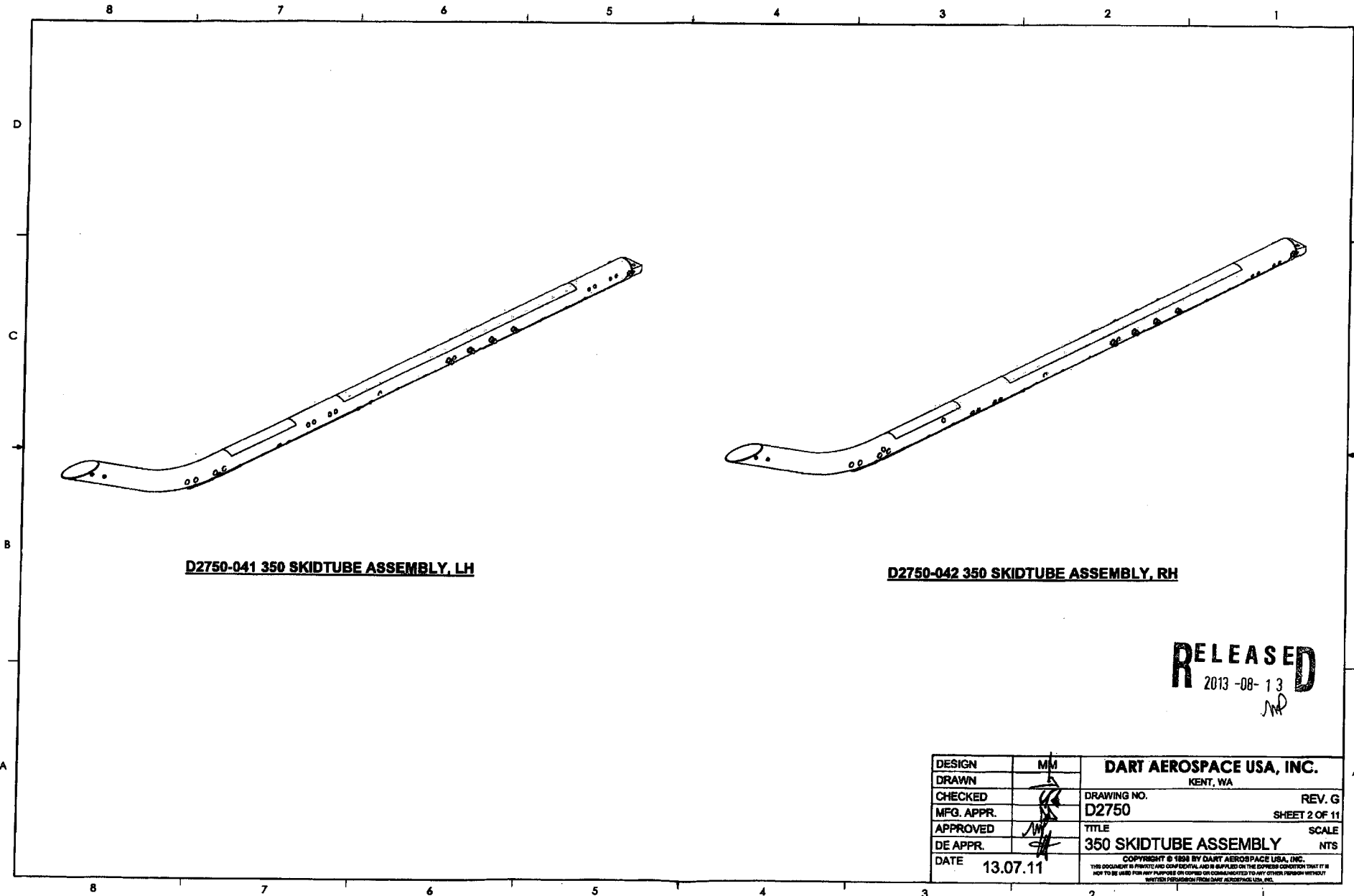
- MATERIAL: MAKE D2750-1/-2/-3/-4 FROM D2600-3 EXTRUSION (INITIAL LENGTH = 120.0).
- FINISH: ACID ETCH, ALODINE ASSEMBLY PER DART QSI 005 4.1 PRIOR TO INSTALLING D2739 WEB.
STANDARD: PRIME (REF. 4.2, 1.3.3) AND PAINT WHITE PER DART QSI 005 4.2
OPTIONAL: POWDER COAT WHITE (REF. 4.3.5.1) PER DART QSI 005 4.3
BLACK ANTI-SKID PAINT AS INDICATED TO 1.0 ABOVE SKIDTUBE CENTER-LINE PER DART 005 4.4 (OPTIONAL).
- TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- UNITS: INCHES UNLESS OTHERWISE NOTED
- BREAK SHARP EDGES: N/A
- IDENTIFICATION: N/A
- WEIGHT: D2750-041/-042/-043/-044 = 26.5 LBS
- WELD PER DART QSI 004
- INSTALL ALS4-1032-225 INSERTS AFTER FINISH AS INDICATED. DRILL 'F' SIZE HOLES (Ø0.297) FOR WEARSHOE INSERTS
- FINAL CONFIGURATION SHOULD HAVE THE FOLLOWING MINIMUM MECHANICAL PROPERTIES:
MINIMUM YIELD TENSILE STRENGTH = 35 KSI
MINIMUM ULTIMATE TENSILE STRENGTH = 38 KSI
- COAT ALL EXPOSED FASTENERS WITH LPS LABORATORIES "LPS PROCYON" AFTER FINAL ASSEMBLY, CLEAN EXCESS OFF
FINISH WITH MEK DEGREASER.
- SPACER AND PLUG INSTALLED SAME AS SECTION AJ-AJ EXCEPT HORIZONTAL
- SPACER AND PLUG INSTALLED SAME AS SECTION AP-AP EXCEPT HORIZONTAL

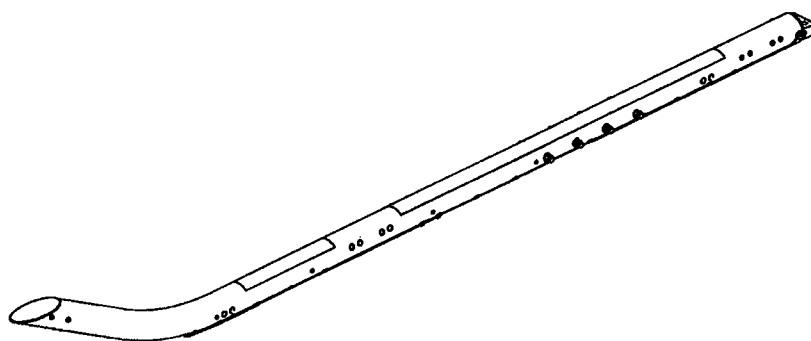
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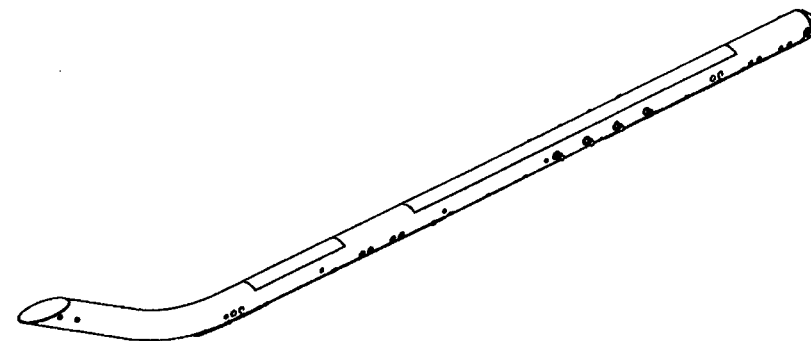
54138719

	CORRECTED TOLERANCE ON Ø0.500 THRU HOLE: IS: +0.010/-0.000, WAS: +0.100/-0.000 (ZN B3-4, B2-5); ADD VIEW TO CONTROL FWD BEND ORIENTATION (ZN D-1-4/-5/-6/-7); UPDATED FINISH OPTIONS: INSIDE OF TUBE NO LONGER SPRAYED WITH LPS-3. REASON: PAR13-278 AND NCR13-2757	MB	13.07.11
G			
F	INCORPORATE DSI 9413; QTY (3) D3537-1 WAS QTY (5) (ZN C8-1); D3791-1/-3 REPLACES D3535-13/-35 (ZN C8-1); D3794-1/-3 REPLACES D3536-13/-35 (ZN B8-1); ADD D3791-1 (ZN C8-1); WEARSHOE HOLES UNDER FWD/AFT SADDLE REMOVED (8 PL); WEARSHOE HARDWARE QTY UPDATED (ZN B8-1); D3488-041/-042 HARDWARE UPDATED (ZN C1-8, 9, 10, 11); ADD NOTE 12 AND 13 (ZN A6-1); REASON: REF. NCR 08-043	PH	08.07.16
E	CHANGE TO STAINLESS STEEL WEARPLATES; ADD RUBBER GASKETS; CHANGE INSERTS; ADD D3631-1; REMOVE QTY (38) NAS1515H3L; REMOVE QTY (10) NAS1515H8L; REMOVE D2741, QTY (2) AN960C818; REMOVE QTY (2) MS21083C8	CB	07.05.17
D	ADD HOLES AND SPACERS FOR APICAL FLOATS; INCORPORATE DEO 9133/9157	PH	06.01.05
C	ADD D2750-3/D2750-4; INCORPORATE D2738 AND D2740	CP	98.11.18
B	CHANGE MS24694-S293 TO AN8-16A	CP	98.09.01
A	NEW ISSUE	DS	98.04.16
REV.	DESCRIPTION	BY	DATE
DESIGN	MM		
DRAWN			
CHECKED			
MFG. APPR.			
APPROVED			
DE APPR.			
DATE	13.07.11		
DART AEROSPACE USA, INC. KENT, WA			
DRAWING NO. D2750		REV. G SHEET 1 OF 11	
TITLE 350 SKIDTUBE ASSEMBLY		SCALE NTS	
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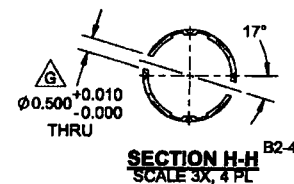
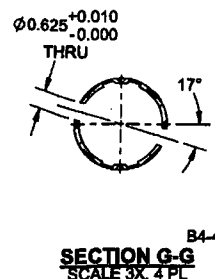
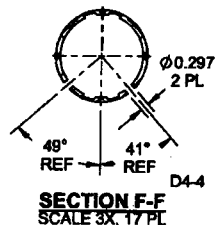
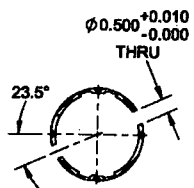
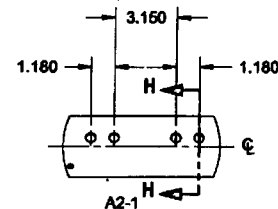
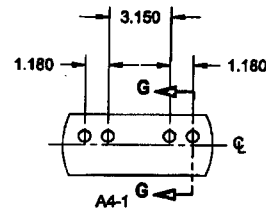
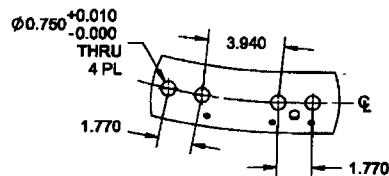
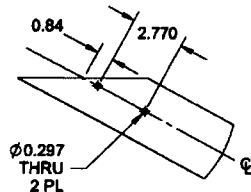
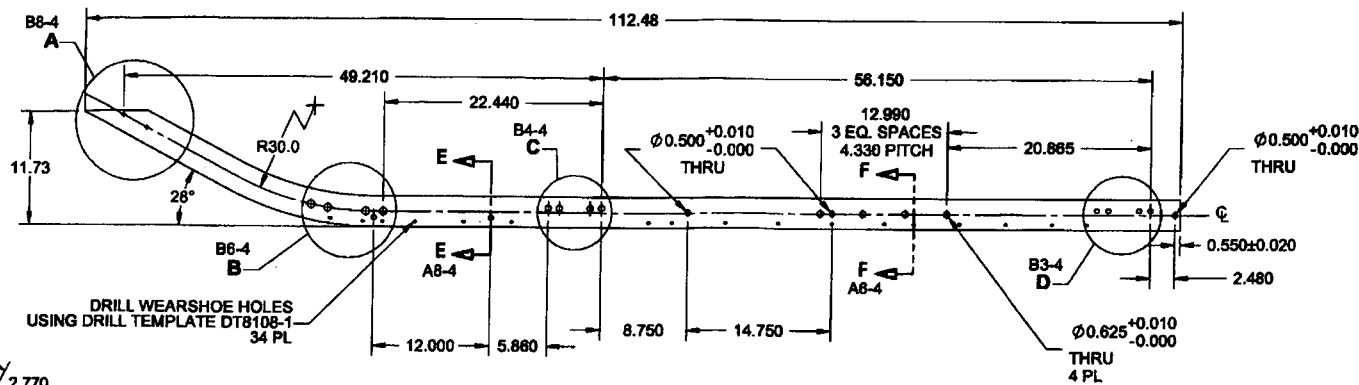
D2750-043 350 SKIDTUBE ASSEMBLY, LH



D2750-044 350 SKIDTUBE ASSEMBLY, RH

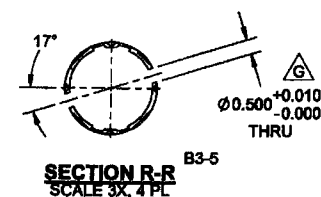
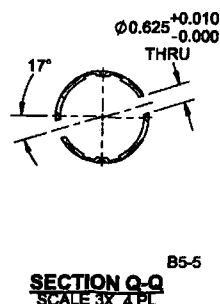
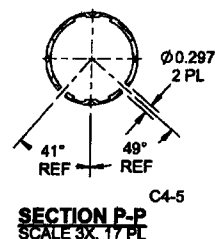
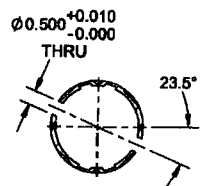
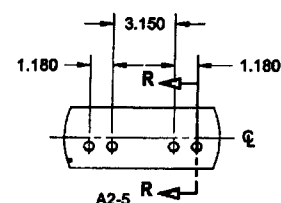
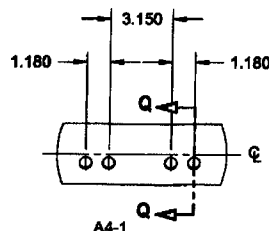
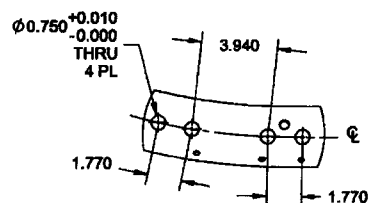
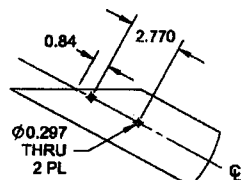
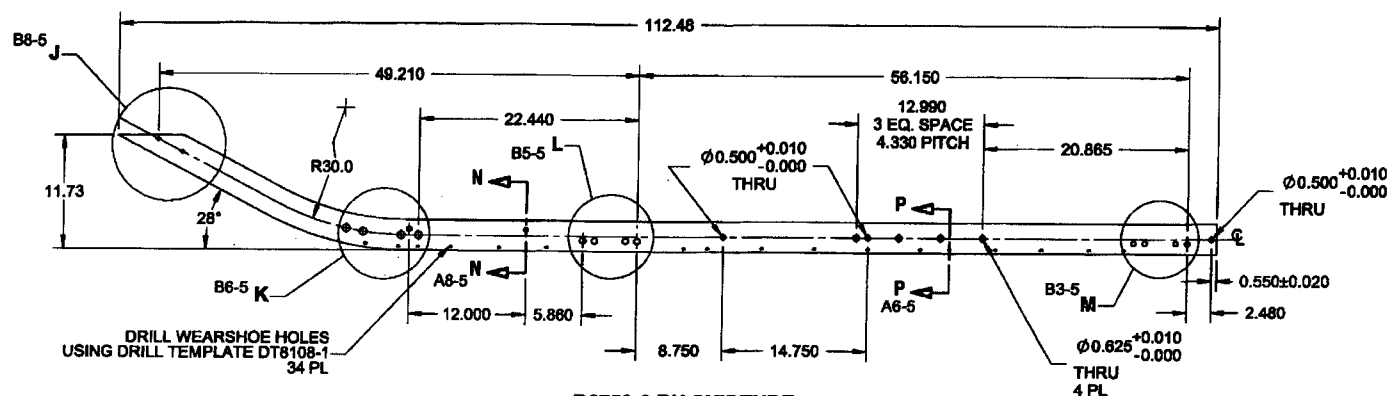
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CHECKED	<i>[Signature]</i>	DRAWING NO.	REV. G
MFG. APPR.	<i>[Signature]</i>	D2750	SHEET 3 OF 11
APPROVED	<i>[Signature]</i>	TITLE	SCALE
DE APPR.	<i>[Signature]</i>	350 SKIDTUBE ASSEMBLY	NTS
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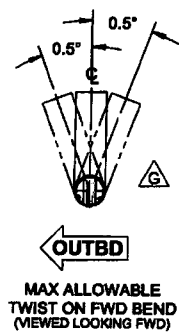
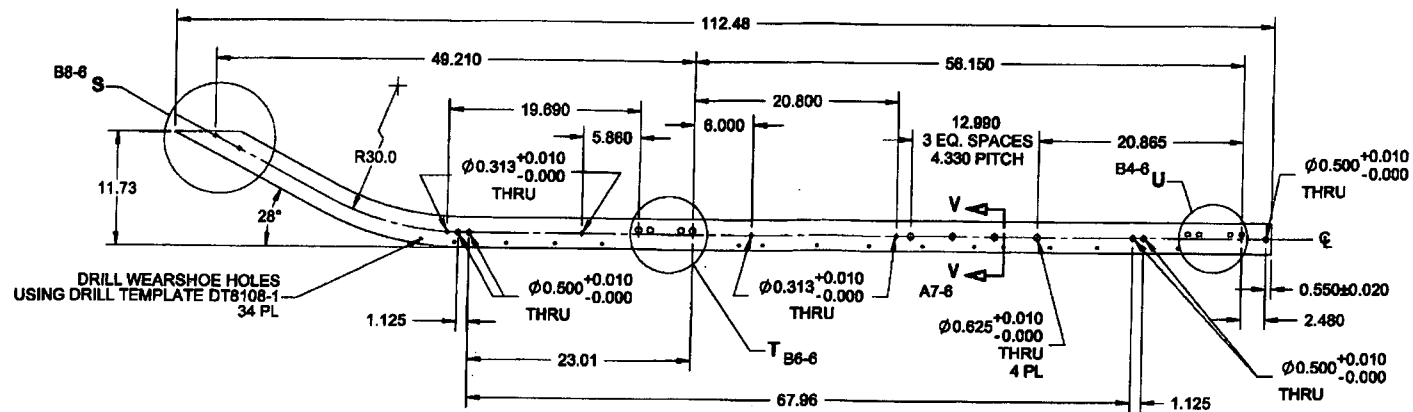
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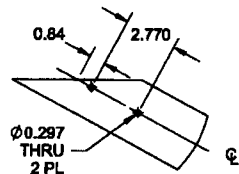
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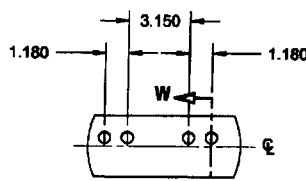
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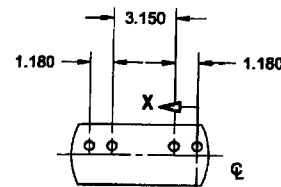
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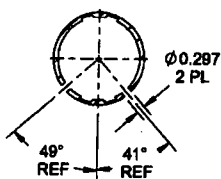
DETAIL S
D8-6
SCALE 2X



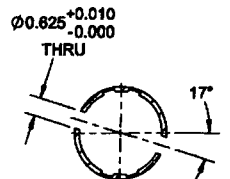
DETAIL T
C5-6
SCALE 2X



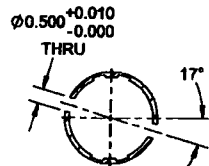
DETAIL U
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SCALE 2X



SECTION V-V
C4-6
SCALE 3X, 17 PL



SECTION W-W
B8-6
SCALE 3X, 4 PL

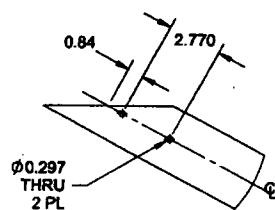
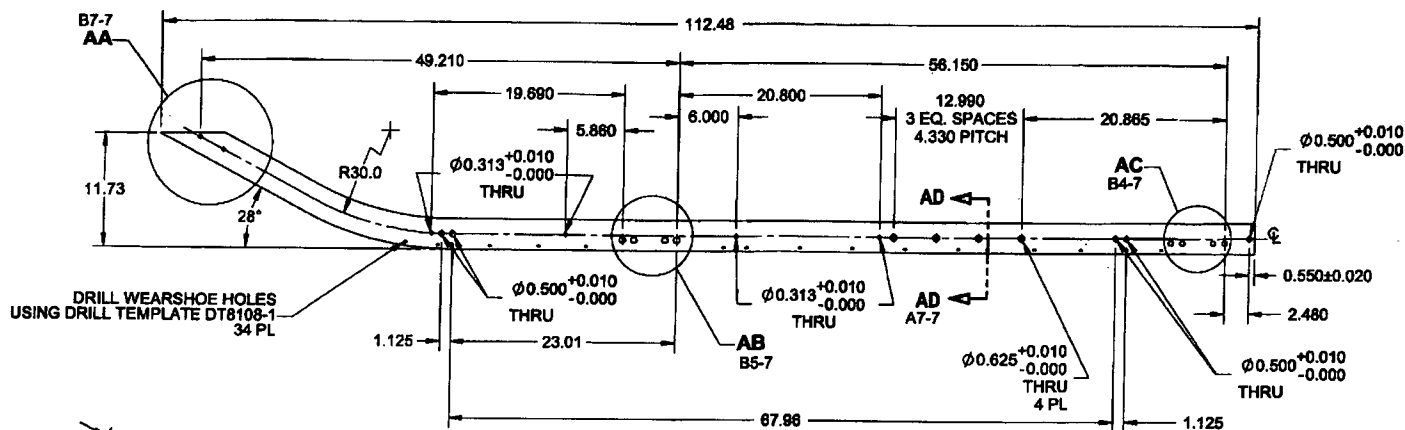


SECTION X-X
B4-6
SCALE 3X, 4 PL

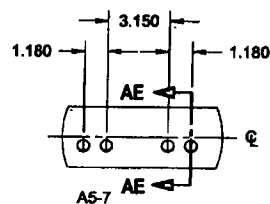
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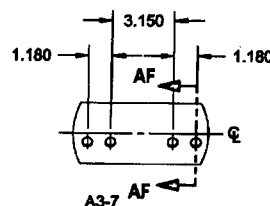
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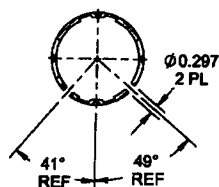
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D7-7
SCALE 2X



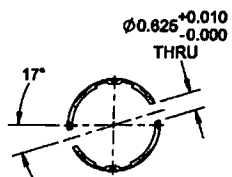
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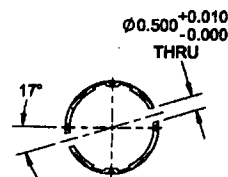
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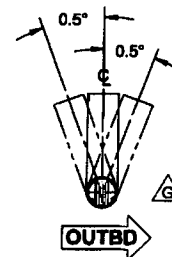
SECTION AD-AD
D3-7
SCALE 3X, 17 PL



SECTION AE-AE
B6-7
SCALE 3X, 4 PL



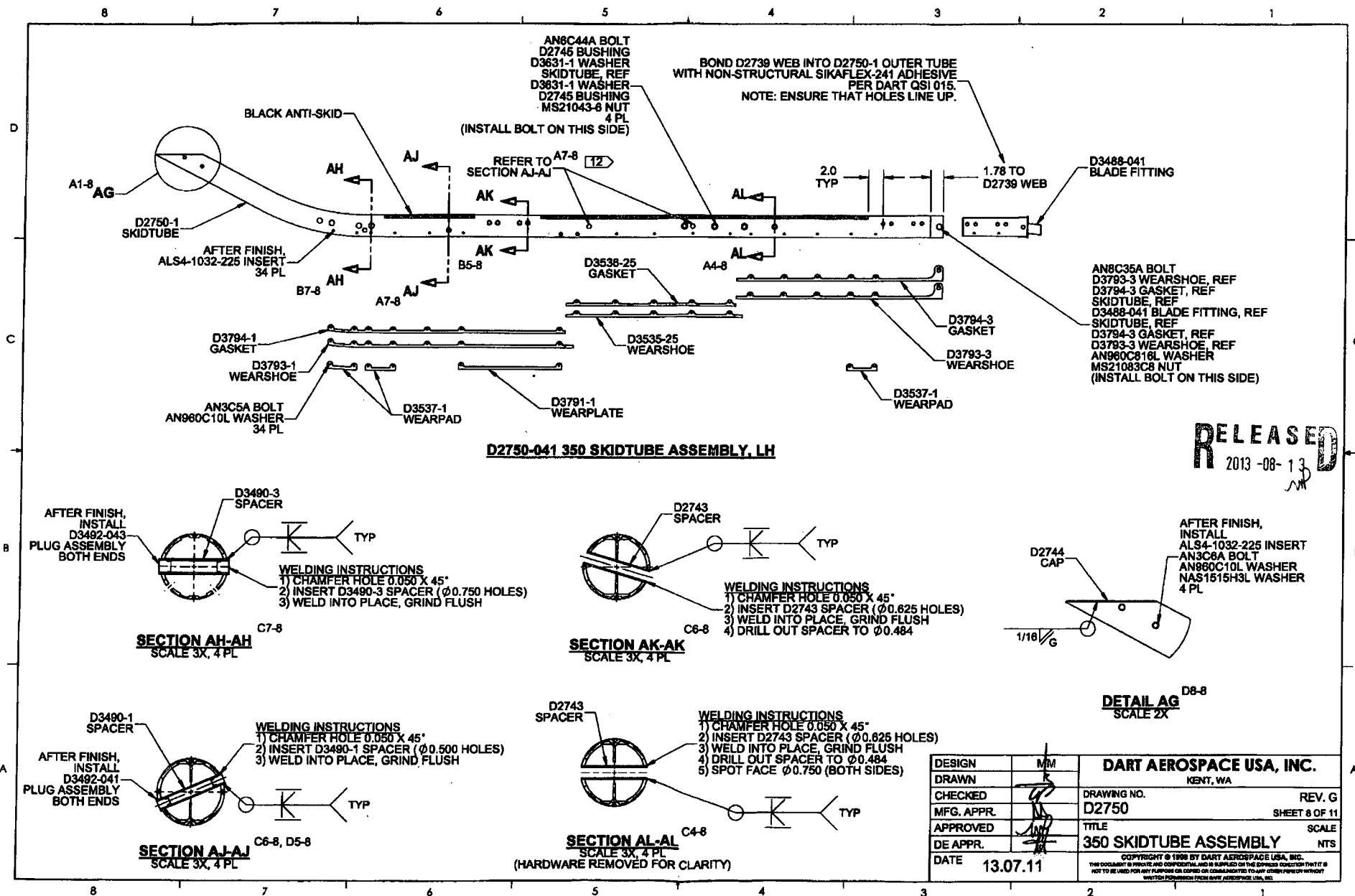
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B4-7
SCALE 3X, 4 PL

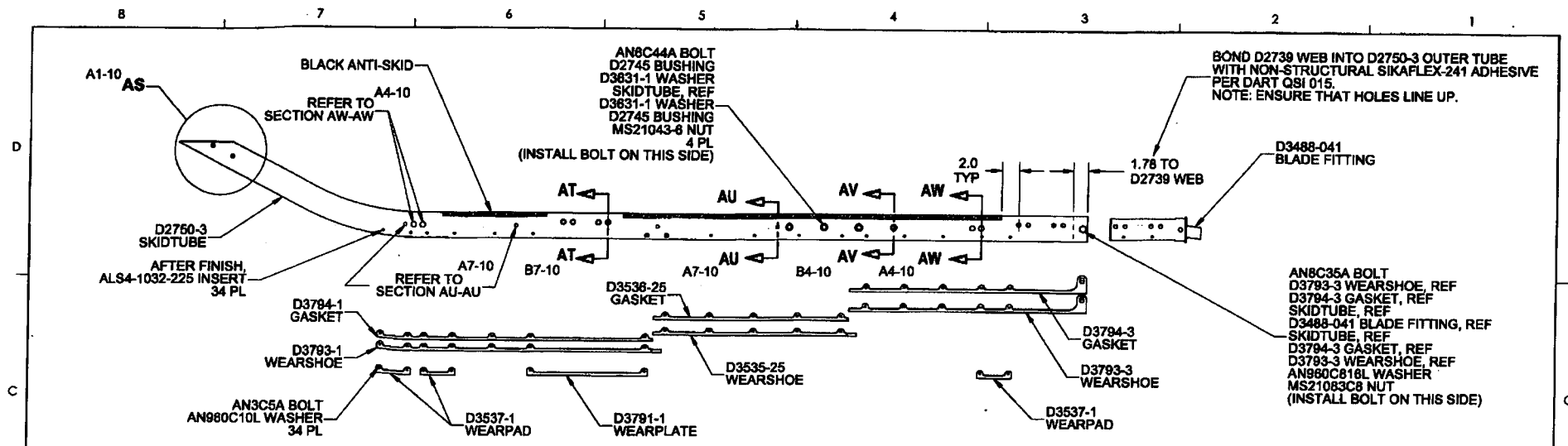


MAX ALLOWABLE
TWIST ON FWD BEND
(VIEWED LOOKING FWD)

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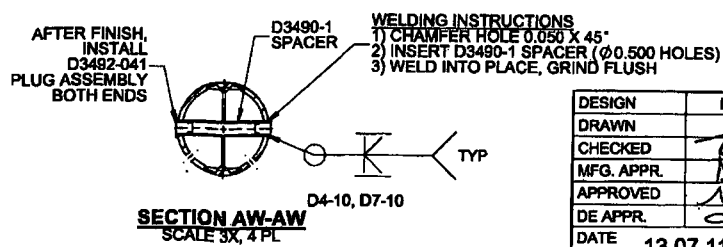
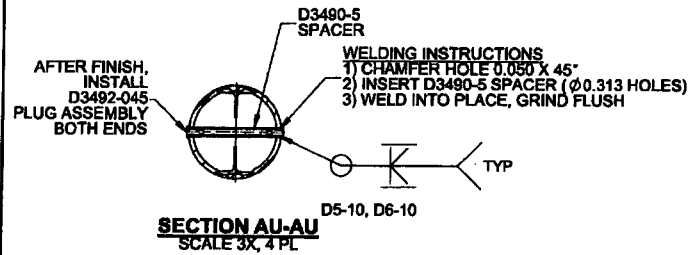
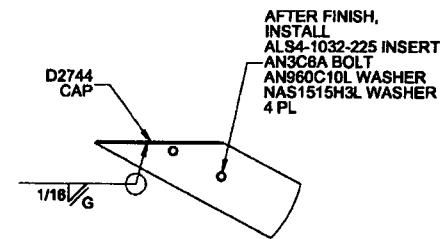
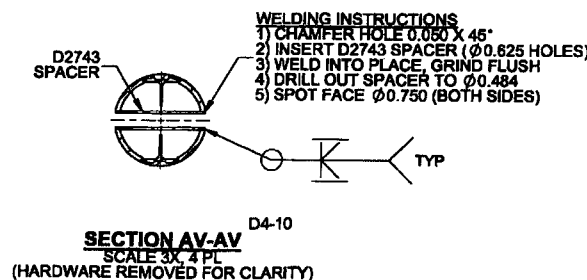
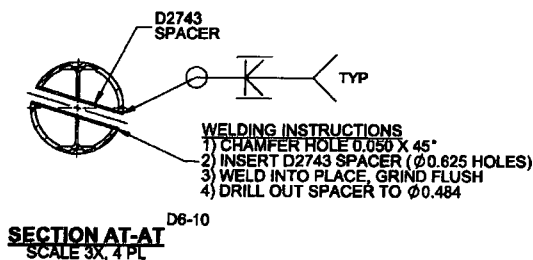
DESIGN	MM	DART AEROSPACE USA, INC.	
DRAWN		KENT, WA	
CHECKED		DRAWING NO.	REV. G
MFG. APPR.		D2750	SHEET 7 OF 11
APPROVED		TITLE	SCALE
DE APPR.		350 SKIDTUBE ASSEMBLY	NTS
DATE	13.07.11	COPYRIGHT © 1998 BY DART AEROSPACE USA, INC. THIS DOCUMENT IS UNCLASSIFIED AND IS SUPPLIED ON THE CONDITION THAT IT IS NOT TO BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE USA, INC.	





D2750-043 350 SKIDTUBE ASSEMBLY, LH

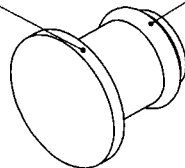
RELEASE
2013-08-13



DESIGN	MM	DART AEROSPACE USA, INC.	
DRAWN		KENT, WA	
CHECKED		DRAWING NO.	REV. G
MFG. APPR.		D2750	SHEET 10 OF 11
APPROVED		TITLE	SCALE
DE APPR.		350 SKIDTUBE ASSEMBLY	NTS
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D3492-XX PLUG
(SEE TABLE)

NAS1611 O-RING
(SEE TABLE)



D3492-XXX PLUG PARTS LIST

QTY -041	QTY -043	QTY -045	QTY -047	QTY -049	QTY -051	QTY -053	QTY -055	PART NUMBER	DESCRIPTION
X								D3492-041	PLUG ASSEMBLY
	X							D3492-043	PLUG ASSEMBLY
		X						D3492-045	PLUG ASSEMBLY
			X					D3492-047	PLUG ASSEMBLY
				X				D3492-049	PLUG ASSEMBLY
					X			D3492-051	PLUG ASSEMBLY
						X		D3492-053	PLUG ASSEMBLY
							X	D3492-055	PLUG ASSEMBLY
1								D3492-1	PLUG
	1							D3492-3	PLUG
		1						D3492-5	PLUG
			1					D3492-7	PLUG
				1				D3492-9	PLUG
					1			D3492-11	PLUG
						1		D3492-13	PLUG
							1	D3492-15	PLUG
		1						NAS1611-005	O-RING
			1					NAS1611-007	O-RING
1								NAS1611-010	O-RING
						1		NAS1611-012	O-RING
	1							NAS1611-013	O-RING
				1			1	NAS1611-015	O-RING
				1				NAS1611-016	O-RING

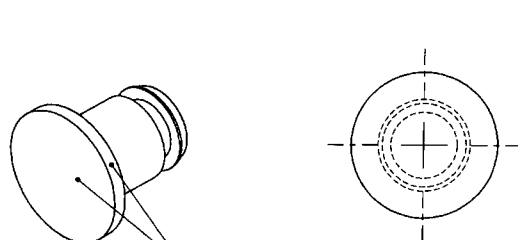
NOTES:

1) O-RING: POSSIBLE SUPPLIER P/N: NAS1611-XXX OR PARKER 2-XXX

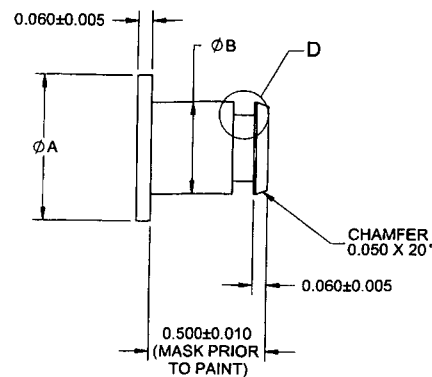
RELEASED
2013-11-13

20101101 SH 138719

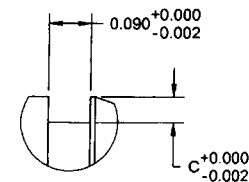
E	ADD -055 PLUG ASSY & -15 PLUG	AP	13.08.08
D	INCORPORATED DEO D3492-C-1: SHT 2 DIM C FOR -1 WAS 0.055. (SEE CAR11-048)	AJS	11.05.24
C	ADD -049/-051/-053. CHANGE DRAWING FORMAT	PH	07.10.05
B	ADD -047: UPDATE DIM A FOR -045	PH	06.05.11
A	NEW ISSUE	PH	06.01.04
REV.	DESCRIPTION	BY	DATE
DESIGN	PH	DART AEROSPACE LTD	
DRAWN	AP	HAWKESBURY, ONTARIO, CANADA	
CHECKED	AJS	DRAWING NO.	REV. E
MFG. APPR.	11	D3492	SHEET 1 OF 2
APPROVED	11	TITLE	SCALE
DE APPR.	11	PLUG	NTS
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POWDER COAT THESE
FACES ONLY PER NOTE 2



D3492-XX PLUG



DETAIL D

D3492-XX PLUG MACHINING DETAILS

P/N	A	B	C	MATERIAL SPEC
D3492-1	0.625	0.394	0.050	M6061T6R0.625
D3492-3	0.750	0.582	0.045	M6061T6R0.750
D3492-5	0.375	0.188	0.045	M6061T6R0.375
D3492-7	0.500	0.270	0.045	M6061T6R0.500
D3492-9	0.938	0.750	0.045	M6061T6R1.000
D3492-11	0.850	0.664	0.045	M6061T6R0.875
D3492-13	0.750	0.510	0.045	M6061T6R0.750
D3492-15	0.850	0.640	0.050	M6061T6R0.875

NOTES:

- 1) MATERIAL: ALUMINUM 5052-H32 OR 6061-T6 OR 1100-0 PER QQ-A-225/7 (5052) OR QQ-A-225/8 (6061) OR QQ-A-200/8 (6061) OR QQ-A-225/1 (1100) (REF. DART MATERIAL SPEC M6061T6R0.000)
- 2) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
POWDER COAT WHITE GLOSS (4.3 5.1) PER DART QSI 005 4.3
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: N/A
- 7) WEIGHT: N/A

DESIGN	PH	DART AEROSPACE LTD	
DRAWN	AP	HAWKESBURY, ONTARIO, CANADA	
CHECKED	AS	DRAWING NO.	REV. E
MFG. APPR.	DS	D3492	SHEET 2 OF 2
APPROVED	AP	TITLE	SCALE
DE APPR.	AP	PLUG	4:1
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2013-11-13